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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,292	03/18/2004	Diana Ulrich Kean	YAMAP0913US	5682

43076 7590 06/07/2006

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EXAMINER	
KHATRI, PRANAV V	

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/803,292	KEAN ET AL.	
	Examiner	Art Unit	
	Pranav V. Khatri	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1-3 and 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamagishi (US Patent No. 5,855,425).

Regarding claim 1, Hamagishi discloses a parallax barrier (fig 2b) comprising a plurality of substantially opaque regions (close regions) defining a plurality of groups of parallel slits (open regions), each said group comprising N (two slits) of said slits where N (2) is an integer greater than one (2>1), said slits of each said group being spaced apart with a first pitch b1 (three close bars across) in a direction perpendicular to said slits (open slits). Hamagishi does not explicitly teach said groups being spaced apart with a second pitch b2, in said direction perpendicular to said slits, substantially equal *2.N.b1*.

It would have been an obvious matter of design choice to have the second pitch b2 equal to the *2.N.b1*, since such a modification would have involved a mere change in the size of a component (e.g. the spacing between the groups). A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose,* 105 USPQ 237 (CCPA 1955). One would have been motivated to have the second groups spaced apart by a second pitch *b2*, in said direction perpendicular to said slits,

substantially equal to *2.N.b1* in order to allow high resolution while spacing the slits at a desired design distance from the dispersion panel.

Regarding claim 2, Hamagishi discloses in which said slits (two slits per group) of each said group have substantially a same maximum light transmission (as seen in fig 1, an equal transmission through 2a).

Regarding claim 3, Hamagishi discloses in which each of said substantially opaque regions has a finite width (as seen in fig 1 the close regions of 2a have a finite width).

Regarding claim 5, Hamagishi discloses in which N is equal to 2 (two open slits in a group as seen in fig 2b).

Regarding claim 6, Hamagishi discloses the claimed invention except for in which N is equal to 3. It would have been an obvious to one having ordinary skill in the art at the time the invention was made to have N be 3 slits instead of 2, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.,* 193 USPQ 8. One would have been motivated to have N be 3 instead of 2 in order to allow high resolution at a designed slit number for each group.

Regarding claim 7, Hamagishi discloses comprising an active device having first and second modes of operation, said active device providing said group of said slits in said first mode of operation and providing an alternative slit arrangement in said second mode (Col 2, lines 21-30, transmitting portions can be shifted, so the slit width arrangement will be shifted in size in different modes).

Regarding claim 8, Hamagishi discloses in which said alternative slit arrangement comprises a plurality of parallel slits spaced apart with a substantially uniform pitch in said direction perpendicular to said slits (Col 2, lines 21-30, the amount of the slits being spaced apart will be the same as seen in fig 2b, which is three bars, but the width will be shifted).

Regarding claim 9, Hamagishi discloses the claimed invention except in which said active device has an operating area and has a third mode of operation in which said active device is substantially uniformly transmissive to light throughout said operating area. It would have been an obvious to one having ordinary skill in the art at the time the invention was made to have a third mode in addition to the second mode, since it has been held that a mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.,* 193 USPQ 8. One would have been motivated to modify figure 3 so that the slit layer 2a is moved closer to 2b (**g**) so that a majority of the slits of layer 2a will be smaller and the layer 2a will be more transmissive in order to allow for high resolution at a desired design distance from the dispersion panel.

Regarding claim 10, Hamagishi discloses a multiple view display comprising a spatial light modulator (Col 4 lines 15-18, 1L and 1R) and a parallax barrier (fig 2b) comprising a plurality of substantially opaque regions (close regions) of defining a plurality of groups of parallel slits (open regions), each said group comprising N (two slits) of said slits where N (2) is an integer greater than one (2>1), said slits (open slits) of each said group being spaced apart with a first pitch b1 (three close bars across) in a

direction perpendicular to said slits. Hamagishi does not explicitly teach said groups being spaced apart with a second pitch b2, in said direction perpendicular to said slits, substantially equal *2.N.b1*.

It would have been an obvious matter of design choice to have the second pitch b2 equal to the *2.N.b1*, since such a modification would have involved a mere change in the size of a component (e.g. the spacing between the groups). A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose,* 105 USPQ 237 (CCPA 1955). One would have been motivated to have the second groups spaced apart by a second pitch *b2*, in said direction perpendicular to said slits, substantially equal to *2.N.b1* in order to allow high resolution while spacing the slits at a desired design distance from the dispersion panel.

Regarding claim 11, Hamagishi discloses in which said modulator comprises a plurality of columns of pixels extending parallel to said slits (Fig 1, 1R and 1L, column 2b is parallel to slits of 2a).

Regarding claim 12, Hamagishi discloses in which said columns have a third pitch p, in a direction perpendicular to longitudinal directions of said columns (the length from top to bottom of the bars in fig 2b numeral 2a is interpreted to be the same length of pixel column of fig 1 numeral 2b), which differs from said first pitch so as to provide viewpoint correction.

Regarding claim 13, Hamagishi discloses the claimed invention except for in which said first pitch b1 is given by: $b1 = p /(1 \pm p/ e)$ where p is said pitch of said columns and e is a pitch of primary viewing windows produced by said display. It would

have been obvious to one having ordinary skill in the art at the time the invention was made have proportion regarding the first pitch b1, third pitch p and the viewing window, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233. One would have been motivated to have a proportional relationship in regards to the pitch of the columns and the pitch of the primary viewing windows in order to provide a relationship for design adjustment.

Regarding claim 14, Hamagishi discloses in which said columns have a third pitch p, in a direction perpendicular to longitudinal directions of said columns (the length from top to bottom of the bars in fig 2b numeral 2a is interpreted to be the same length of pixel column of fig 1 numeral 2b), which is greater than said first pitch (as seen in fig 2b, the length of the bars is larger than the first pitch which is three bars across).

Claims 15, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamagishi (US Patent No. 5,855,425) in view of Taniguchi (US Patent No. 6,445,406).

Regarding claim 15, Hamagishi discloses the claimed invention as set forth above except in which said columns comprise red, green and blue columns, but it is well known in the art a pixel of the column comprises red, green, and blue for producing color images. Furthermore, Hamagishi teaches of pixels, which implies rgb color pixels.

However, Taniguchi et al. discloses in which red, green, and blue color filters are arranged in a pixel (see Taniguchi et al. Col 18 Lines 3-4).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the teachings of Hamagishi parallax barrier and spatial light modulator with a Taniguchi et al. pixel that comprises red, green, and blue for the purpose of displaying a color image.

Regarding claim 16, Hamagishi in view of Taniguchi et al. discloses in which N is equal to 2 (two open slits in a group as seen in fig 2b of Hamagishi).

Regarding claim 19, Hamagishi in view of Taniguchi et al. discloses the claimed invention except for in which N is equal to 3. It would have been an obvious to one having ordinary skill in the art at the time the invention was made to have N be 3 slits instead of 2, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.,* 193 USPQ 8.

Claims 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamagishi (US Patent No. 5,855,425) in view of Taniguchi (US Patent No. 6,445,406) and in further view of Isono et al. (US Patent No. 5,315,377).

Regarding claims 17 and 18, Hamagishi in view of Taniguchi et al. discloses the claimed invention except is silent about a known arrangement in the art in which said columns are arranged as repeating groups with each group arranged in an order blue, red, blue, red, green, blue, green, blue, red, green, red, green or in another order green, green, blue, blue, red, red.

However, Isono et al. discloses in which said columns are arranged as repeating groups with each group arranged in an order blue, red, blue, red, green, blue, green,

blue, red, green, red, green or in another order green, green, blue, blue, red, red are also well know in the art as shown by Isono et al. in Fig 2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Hamagishi in view of Taniguchi et al. to teach the first combination and second combination order of Isono et al. for the purpose of producing different arrangements of color in the right eye and left eye with two sets of Red, Green, or Blue (RGB) as shown by Isono et al. Furthermore, the second combination order of arrangement is set for producing color as well, but with only one set or RGB per eye instead of two sets of RGB as presented by the first combination; furthermore, producing color with different arrangements is not a novelty.

Regarding claims 20 and 21, Hamagishi in view of Taniguchi et al. and in further view of Isono et al. as a combination discloses in which said columns are arranged as repeating groups of 18 (see Isono Fig 6D) with each said group comprising three consecutive pairs of identical triplet and with colors of said triplets of said consecutive pairs being rolled by one position with respect to each other, and in which said columns are arranged as repeating groups of 36 with each said group comprising six consecutive pairs of identical triplets, said triplets of said consecutive pairs having an order comprising all permutations of red, green and blue are methods that are both well known in the art because each pair should have three colors so when displayed back to the viewers left eye and the right eye the entire image is visible and the image is in color; furthermore, the number of repeating groups will only increase the size of image for the viewer which is also well know in the known art.

Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamagishi (US Patent No. 5,855,425) in view of Moseley et al. (US Patent No. 6,473,141).

Regarding claim 22, Hamagishi discloses the claimed invention as set forth above except comprising a display driver (see Hamagishi Fig 1 Numeral 12) for supplying image signals representing a plurality of views as interlaced columns to said modulator.

However Moseley et al. discloses a display driver for supplying image signals representing a plurality of views as interlaced columns to said modulator (SLM) (see Moseley et al. Col 2 Lines 42-44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the display driver of Hamagishi to have signals representing interlaced columns such as Moseley et al. for the purpose of allowing observer's eyes located at the viewing ranges/planes to view the entire image which is interlaced.

Regarding claim 23, Hamagishi in view of Moseley et al. as a combination discloses in which said image signals represent two views is well known in the art because a stereoscopic image will display an image for the left eye and another for the right eye and can only be seen by one respectively which would be two views.

Regarding claim 24, Hamagishi in view of Moseley et al. as a combination discloses comprising an autostereoscopic display (see Moseley et al. Fig 1a) in which

said image signals represent at least one pair of stereoscopic views (see Hamagishi fig 10).

Response to Arguments

Applicant's arguments filed 3/22/2006 have been fully considered but they are not persuasive.

Applicant's argument or disagreement that a second pitch *b2* being substantially equal to *2.N.b1* does not represent a mere change in the size of a component, and it represents a completely different relationship between the groups of slits and the respective pitches is not found persuasive. It is seen that the particular location of the parallax barrier at any point between the projectors and dispersion panel would be a matter left to the ordinarily skilled artisan. The particular claimed relationship between the pitches b1 and b2 would necessarily be satisfied for some location of the parallax barrier between the projectors and the dispersion panel. In figure 3 of Hamagishi (5,855,425) if **g** or **G** (2a) is moved further away from 2b, a smaller pitch **b** will be required and a larger second pitch of the groups (i.e. spacing between the groups) will be required. Furthermore, the closer the slits 2a are to 2b, a larger pitch **b** will be required and a smaller second pitch of the groups (i.e. spacing between the groups) will be required. The particular location of the parallax barrier will be dictated by the particular spatial constraints of the apparatus, e.g. the size/shape of the housing, relative arrangement of the projectors/dispersion panel, etc.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pranav V. Khatri whose telephone number is 571-272-8311. The examiner can normally be reached on M-F, 8:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pranav Khatri
Examiner
05/22/2006

MARK A. ROBINSON
PRIMARY EXAMINER